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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/614,118	07/11/2000	David W. Cannell	5725.0393	1975

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EXAMINER
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SHEIKH, HUMERA N

ART UNIT	PAPER NUMBER
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1615

DATE MAILED: 06/25/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/614,118

Applicant(s)

CANNELL ET AL.

Examiner

Humera N. Sheikh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 11 April 2003 (paper no. 20).
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 30-56 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 30-56 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 20.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## **DETAILED ACTION**

### **Status of the Application**

Receipt of the response and the Information Disclosure Statement, both filed 04/11/03 is acknowledged.

Claims 30-56 are pending. No amendments have been made. Claims 30-56 remain rejected.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966); that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 30-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wisotzki et al. (US Pat. No. 4,900,545) or Koga et al. (US Pat. No. 5,660,838) or Syed et al. (US Pat. No. 5,641,477).

Witsozki teaches a method for the regeneration of hair split-ends and for caring for and revitalizing mistreated hair, comprising applying to the hair, a treatment composition comprising mono- or disaccharides, more especially, the pentoses (5 C-atoms) and hexoses (6 C-atoms), and also the disaccharides derived from the pentoses and hexoses (see reference column 1, line 49 through col. 2, line 49).

Witsozki teaches that the mono- or disaccharides are any aldoses and ketoses or their mixtures. Witsozki further teaches that suitable monosaccharides include glucose, mannose, galactose, ribose, arabinose, xylose, fructose and sorbose, while suitable disaccharides include sucrose, lactose, maltose and cellobiose (col. 2, line 36-49). Also suitable are naturally occurring or technical mixtures wherein the mentioned mono- or disaccharides are predominant. Glucose is used as an example, in this instance.

The treatment preparations are in the form of aqueous solutions or emulsions, which may be formulated into shampoos or permanent wave setting lotions (cols. 3 and 5-6). Witsozki teaches that the sugars are present in the composition in percentages ranging from 0.1% to 8% by weight (col. 2, lines 24-30). This range clearly meets the applicant's required range of 0.01% to 5.00%.

The instant invention is drawn to a method of protecting a keratinous fiber from extrinsic damage or repairing a keratinous fiber following extrinsic damage, comprising the application of C<sub>3</sub>-C<sub>5</sub> monosaccharide sugar composition.

Witsozki teaches such a method for regenerating, revitalizing or repairing hair comprising applying mono- or disaccharide sugar, particularly of pentoses (5 C-atoms) and the disaccharides derived from pentoses (see col. 2, lines 36-40). Witsozki teach at col. 6, lines 3-5, that, "in every case, it was found that the hairs had been regenerated, i.e., the split-ends had been partially *repaired*." There is no distinction observed between the prior art and the instant invention since the applicant's objectives have clearly been met and addressed by the prior art.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the teachings of Witsozki, who teaches a method of repairing split-end hair, comprising sugars, such as (5 C-atoms) pentoses and the disaccharides derived from the pentoses, because Witsozki demonstrates that a hair regenerating effect can be enhanced by employing a mono- or disaccharide to treat damaged hair. The expected result would be an improved method for regenerating split-ends and ultimately, a progressive reparative process for keratinous substances.

Koga teaches a method for providing enhanced moisture retention and reducing excessive roughness and dryness of the hair comprising the application of a xylobiose

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sugar composition to the hair (see Abstract). Koga teaches that xylobiose preparations are effective not only in reducing excessive roughness and dryness of the skin to impart a natural moistness and luster but also in reducing excessive roughness and dryness of the hair to give a natural oiliness (col. 1, lines 8-14).

Xylobiose may be incorporated into hair care products, such as hair treatments, rinses and hair conditioners, and detergents such as hair shampoos and body shampoos. The preparations can be formulated into various dosage forms, such as aqueous solutions, emulsions and water/oil bilayer systems (col. 2, lines 14-26).

Xylobiose is taught to be contained in an amount of 0.0001% to 20-wt %, preferably 0.1% to 10 wt % of the composition (col. 2, lines 27-36). This range clearly meets the applicant's required range of 0.01% to 5.00%.

Koga teaches that the xylobiose composition contains xylan saccharified products other than xylobiose, such as xylose and xylotriose. These materials will in no way, impair the moisture-retaining capability of xylobiose (col. 2, lines 37-46).

Bases that are used in the cosmetic compositions can include, sugar esters, saccharides and sorbitol, for example (col. 3, lines 5-15). The examples in columns 4-9, taught by Koga demonstrate the measurements of moisture retaining capability of xylobiose in various skin preparations. In Example 7 (col. 10), Koga teaches the use of xylobiose in a hair shampoo formulation. The results show a natural oiliness when actually applied to the hair and are satisfactory in reducing excessive roughness and dryness of the hair (and skin) (col. 10, lines 1-27).

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The instant invention is drawn to a method of protecting a keratinous fiber from extrinsic damage or repairing a keratinous fiber following extrinsic damage. There is no distinction observed between the prior art and the instant invention, since the prior art teaches the reduction of roughness and dryness of the hair. The examiner notes that this is, in essence, a reparative process for improving damaged hair.

Koga teaches a method for reducing excessively dry, rough hair and restoring hairs natural oiliness with moisture. Rough, dry hair is usually brittle, weak hair. As is generally known, hair that is moist or oily tends to be stronger in nature than rough, dry hair. Koga teaches that the xylobiose composition, which is used in various forms (i.e., hair care products, such as hair treatments, conditioners, rinses, shampoos, etc), reduces the excessive dryness and roughness of hair.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the xylobiose composition of Koga, who demonstrates an effective method of reducing excessive rough, dry hair through the application of xylobiose, because Koga teaches that xylobiose exhibits high moisture retaining capabilities. The expected result would be moist, healthier looking, stronger hair.

Syed teaches a method for the reduction of hair damage and a process for relaxing hair fibers, comprising applying to the hair fibers, a lanthioniztion composition that comprises sugars, resulting in less damaged hair that has *greater tensile strength*

as that compared to hair that does not contain sugar. The composition may contain one or more sugars, or a combination of hydrogenated starch and sugars. Syed teaches that the sugar may be contained in the composition in the range of about 0.1% to about 5.0% by weight of the composition (see reference column 2, lines 48-67). This range clearly meets the applicant's required range of 0.01% to 5.00%.

Representative sugars that can be used in the composition include, but are not limited to sucrose, glucose, fructose, sorbitol and glycerol. The sugars preferably used are sucrose or sorbitol (col. 3, lines 5-8). Syed teaches that the composition may be in the form of a solution or a cream (col. 3, lines 9-12).

The instant invention is drawn to a method of protecting a keratinous fiber from extrinsic damage or repairing a keratinous fiber following extrinsic damage, wherein repairing a damaged keratinous fiber, according to the applicant's interpreted definition, means increasing the alpha-structure and/or increasing the tensile strength of damage to keratinous fibers.

Syed teaches a method for increasing the tensile strength and reducing hair damage comprising the application of a composition composed of sugars (i.e., sucrose, glucose, fructose, sorbitol and glycerol). Syed explicitly teaches at col. 2, lines 48-56, that the addition of a sugar, directly applied to the lanthionization composition, surprisingly, results in hair that has greater tensile strength as compared to a lanthionization composition, which does not contain any sugars.

The applicant attempts to distinguish over the prior art by including specific definitions for the terms, "protecting" and "repairing". However, the prior art fully meets



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the criteria for providing an effective composition for preserving or increasing the tensile strength of hair. In addition, the applicant's have not shown any unexpected results that accrue from the use of C<sub>3</sub>-C<sub>5</sub> sugars. The prior art has initially shown that beneficial effects are brought about by the use of various sugars in hair compositions.

Therefore, it would have been obvious to one of ordinary skill in the hair art at the time the invention was made to use the teachings of Syed, who teaches a method for the reduction of damaged hair and particularly a method wherein hair can have greater tensile strength due to the application of a composition comprising sugars because Syed explicitly teaches that the addition of sugars to the composition can surprisingly increase the tensile strength of hair. The expected result would be an effective method for the repair of hair fibers and thus stronger, healthier hair.

In conclusion, the prior art teaches that the claimed sugars are useful in protecting keratin fibers from external damage. The sugars are useful in protecting hairs against split ends, increasing tensile strength and reducing damage during harsh treatments. The art further teaches that such sugars may be incorporated into formulations and subsequently treated permanent wave lotions or relaxing compositions because these sugars are known to provide beneficial properties to hair and keratinous fibers.

***Response to Arguments***

Applicant's arguments filed 04/11/03 have been fully considered but they are not persuasive.

Firstly, the applicant argued regarding the 35 U.S.C. 103(a) rejections of Wisotzki et al. ('545), stating, "Wisotzki fails to teach heating the keratinous fiber and thus cannot teach the composition must be applied prior to or during heating. Wisotzki teaches restoration of hair subjected to mechanical damage, unlike the damage required in the claimed invention."

These arguments have been fully considered, but were not found to be persuasive. Wisotzki teaches applying the formulation as a hair treatment composition and teaches subsequent rinse. It is the examiner's position that water is sufficient to meet the heat treatment step as instantly claimed. Furthermore, the claims are given their broadest interpretation for the term "heating said fiber." As such the instant invention is rendered obvious and unpatentable over the art of Wisotzki.

Secondly, the applicant argued over the rejection of Koga stating, "The Examiner has no basis for equating roughness with brittle weak hair and Koga does not teach heating the keratinous fiber, or applying the composition prior to or during the heating."

These arguments have been fully considered, but were not found to be persuasive. Koga teaches a method for providing enhanced moisture retention and reducing excessive roughness and dryness of the hair comprising the application of a

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xylobiose sugar composition to the hair. Moreover, Koga, at Table 4, suggests subsequent testing of any of the formulations at 40% relative humidity and 35°C. Therefore, the instant invention is rendered unpatentable and obvious over the art of Koga.

Thirdly, the applicant argued over the rejection of Syed stating, "Syed does not guide one of ordinary skill in the art to the sugar as claimed and does not teach heating the keratinous fiber, or applying the composition prior to or during the heating."

These arguments have been fully considered, but were not found to be persuasive. Syed teaches a method for the reduction of hair damage and a process for relaxing hair fibers, comprising applying to the hair fibers, a composition that comprises sugars, resulting in less damaged hair that has *greater tensile strength* as that compared to hair that does not contain sugar. Moreover, Syed at Table B, column 4, explicitly teaches the rinsing of fibers with tepid (moderately warm) tap water. Therefore the instant invention is rendered unpatentable and obvious over the art of Syed.

Lastly, the applicant argued over the rejection of Felardos stating, "Felardos would require picking and choosing to arrive at the claimed invention and Felardos does not teach heating the keratinous fiber, or applying the composition prior to or during the heating."

These arguments have been fully considered, and were found to be persuasive and thus Felardos is no longer relied upon in view of applicant's remarks.

This application contains claims 1-29 drawn to an invention nonelected with traverse in Paper No. 17. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

### Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Humera N. Sheikh whose telephone number is (703) 308-4429. The examiner can normally be reached on Monday through Friday from 7:00A.M. to 4:30P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thurman Page, can be reached on (703) 308-2927. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-4556.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1235.

*hns*

June 23, 2003

THURMAN K. PAGE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1600

